Surgical Hints

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FOR THE

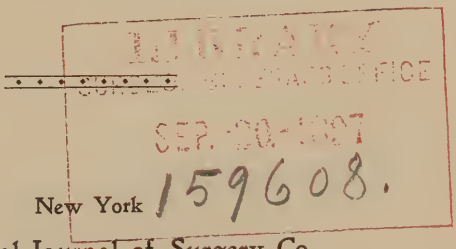
Surgeon and General Practitioner

BY

HOWARD LILIENTHAL, M.D.

Assistant Attending Surgeon to Mt. Sinai Hospital

New York City



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PREFATORY NOTE.

EVERY one of these little observations and suggestions represents a part of the writer's personal experience in the practice of surgery.

The information set forth is not always original, but its value has been tested at the bedside and in the operating room.

SURGICAL HINTS.

General Hints. Surgical operations put off until too late are of very frequent occurrence. Operations performed *too early* are so rare that one never hears of them. The lesson is a very plain one, operate in time if you wish to do all in your power to save your patient.

The old, as a rule, bear heat much better than cold. The hot-water bag will, usually, be more comforting to them than the ice coil.

Never perform an operation without examining the urine for sugar, no matter what its specific gravity may be. If glycosuria exists antiseptic precautions should be redoubled, but the condition does not contra-indicate necessary surgical interference.

Examine the urine for sugar in all cases of carbuncle and in all cases of eczema, especially in eczema of the genitals.

Examine every swelling for pulsation. In the hurry of out-patient practice it has occurred that an aneurism has been incised because it was mistaken for an abscess.

Tumors. In estimating the character of a new growth, one should never depend wholly upon the microscope. Clinical observation is far more important, although in case of doubt the histology, as revealed under the lens, may turn the scale. In the present stage of medical science it would be poor surgery to condemn a limb or an organ, or to perform an operation which would imperil life, on the uncorroborated evidence of the microscope, while a tumor histologically benign, though clinically malignant in its course, should be extirpated as thoroughly as if the pathologist's report had been unfavorable.

Never operate for chronic tumor without having tried anti-syphilitic remedies for at least a week. Many growths supposed to be beyond surgical skill, fairly melt away under the benign influence of mercurial ointment or iodide of potassium. This clinical test is far surer than the microscope in differentiating syphilitic from non-syphilitic growths.

Preparations for Operating. Cotton or linen thread boiled for a few moments in five per cent. carbolic watery solution, makes a useful suture or ligature material in an emergency. It is, of course, not so strong as silk or catgut, but is quite non-irritating, and may

safely be left in a wound as a buried ligature or suture.

Catgut may be rendered aseptic and even antiseptic without complicated apparatus by the following simple method : Wind the gut on reels. Shake the full reels in a jar of ether to remove the fat. Soak them in ten per cent. carbolic made with alcohol for from six to twenty-four hours according to the thickness of the gut. Now place the reels in pure alcohol and the catgut is ready for use, and will be found to have lost little or none of its tensile strength.

A heaping tablespoonful of washing soda to a quart of water, is the proper proportion for the solution in which instruments should be boiled for sterilization. *Do not* boil non-metallic sutures in this liquid, for it will very greatly weaken them. *Do not* boil an aluminum instrument in this liquid, for it will be corroded and completely ruined. Silk sutures and aluminum instruments may be sterilized by boiling in five per cent. carbolic.

Anæsthesia. Let your most trusted assistant administer the anæsthetic. Any intelligent person is able, with a little direction, to assist at the wound, but it requires skill and experience to anæsthetize thoroughly and safely.

Operating with chloroform anæsthesia in a small room in private practice, be sure to remove caged birds or other small household animals. Even when but little of the anæsthetic was used canaries have been killed by the fumes.

When an operation under chloroform has been finished, pour vinegar upon the mask until it is well saturated, and leave the mask in place. As the vinegar evaporates more should be added. This simple procedure has a marked effect in preventing or modifying the nausea after chloroform anæsthesia. It was first advised by a French surgeon, who says that it acts by the vinegar's forming a non-irritating combination with the chloroform vapor already changed in the lungs.

An important element in the choice of a general anæsthetic should be the patient's mental attitude. If he is panic-stricken and demoralized at the prospect of operation and no actual contra-indication exists, ether is far safer than chloroform. Of course, in the presence of bronchitis or active renal disease, ether might better give way to chloroform, at least after unconsciousness has been established.

General anæsthetics are used far too often. A two per cent. boiled solution of cocaine hydro-

chlorate injected, with a sharp needle, *into* the skin, not under it, will enable one to perform such operations as castration, the removal of non-malignant breast tumors, even if they are as big as a cocoanut, many herniotomies, where there is strangulation, and the removal of almost any subcutaneous tumor up to four pounds in weight. Intra-abdominal work, however, to be well done, requires general narcosis.

Antisepsis in Operations. A desiccating powder makes an excellent dressing when one is sure that the wound is absolutely clean. If pus is present the powder will but form a scab, with foul retention beneath.

Look out for your assistants, and hold them equally responsible with yourself for any mishap. A furuncle of minute size on the hand of an assistant may cause the failure of an otherwise perfect piece of surgical work.

In using the trocar and cannula, it is well not to puncture directly through the skin. Infection may be carried in by the instrument from the skin even when you think you have thoroughly sterilized this tissue. The danger may be overcome by making a minute incision through the skin and puncturing through this opening.

When preparing the room for an emergency operation in a private dwelling, do not permit sweeping, dusting, or the taking up of rugs or carpets. This only raises dust which will later settle in the wound and probably cause infection. Cover every undisinfected object with a clean sheet or towel. The dismantling of a room may, however, be permitted if several days are to elapse between the preparations and the operation.

It is usually safer to treat accidental scalp wounds by the open method with wet dressings than to suture them, no matter how clean they look. The resulting scars are rarely of importance, while suture may cause primary adhesion of the skin with retention of septic secretions beneath. In the event of unrecognized injury to the skull, meningitis or brain abscess may be directly consequent upon lack of drainage where suture has been practised.

Iodoform is a very useful drug which nothing has been able to replace, but it must not be forgotten that it may be a local irritant and a systemic poison. Acute constitutional iodoform poisoning occurs much more easily by absorption from fresh wounds than by absorption from granulating surfaces. A quick small pulse, with dilated

pupils and slight elevation of temperature, is a combination of symptoms which, occurring within thirty-six hours of an operation where iodoform has been used, should lead us to suspect the drug intoxication. Delirium, icterus, and a roseolar general eruption make the diagnosis almost certain, At the first symptoms all iodoform should be removed from the wound and the elimination of the poison by diuresis should be encouraged, at the same time nourishing and stimulating the patient. Fortunately this condition is rare, but when once seen can never be forgotten.

Irrigation of wounds should never be performed with a rubber fountain syringe which has ever been used for the giving of an enema. Rectal persistalsis during the administration of the enema often forces fecal matter through the rubber tube and into the bag. This may easily be demonstrated by giving an enema with a glass irrigator bottle, when feces may be seen to enter the bottle and mix with the water therein contained. A new nozzle or tip is not, therefore, a sufficient guaranty of asepsis. Always use a *new* syringe.

Instruments. In purchasing surgical instruments select by preference those which are large enough and strong enough to be used with comfort. Toy in-

struments, such as may be found in many pocket cases, are often worse than useless. Let your instruments be few, simple and efficient.

An aseptic pocket case is a scientific absurdity. A good surgical knife, a stout pair of scissors, a sufficiently large and strong anatomical forceps, and a large probe with a button at one end and an eye at the other, are all the instruments which are really needed. However, a piece of silk and a needle will be often found useful. These instruments may be carried about in a neat, flat little canvas pouch or "folder," and the whole contained in a leather pocket-book will occupy so little room that it may become, as it were, a part of the surgeon himself. The instruments may be sterilized in a match flame and should be dipped in water while hot. The needle and silk may be boiled in a teaspoon, over a match flame. Hemorrhage, even from quite a large vessel, may be checked by means of a silk suture passed around the bleeding place. The occasion must be rare, indeed, when this device will not take the place of the usual "pocket case" artery forceps. The surgeon should have two or more of the canvas containers, so that one may be always available while the others are being washed or sterilized.

Points to Remember in Operating. Do not use the old-fashioned curved bistoury in opening the simplest abscess. It is unsurgical because you proceed from within outward—from the unknown to the known. This is a false principle in philosophy, in surgery, and in everything. Cut from the surface inward and you can deal with difficulties in the order in which they occur. Always work with the aid of sight and do not pin your faith on anatomy.

When a mass of tissue has been removed from the soft parts in an aseptic operation, it is well, by means of sutures, to obliterate as much as possible of the vacant space, bringing its walls everywhere into contact. If this is not done, the defect fills with clot which forms a tempting feast for the germs of putrefaction.

Never depend upon styptics, tight dressings or packing with gauze in treating hemorrhage from any vessel not capillary. Stop every bleeding point with a ligature—a fine one is best if it is strong enough—and you will enjoy the repose contributed by a clear conscience.

In pinning a bandage in place when the patient is under an anæsthetic, be sure that the dressing

is not pinned to the skin. This accident is far from rare.

If you wish to make a neat scar and avoid the unsightly suture points, you can do so by sewing through the cut edge of skin laterally, so that the strongly-curved needle shall not at any point pierce the epidermis. The continuous suture lends itself most readily to this method, and even the knots at the beginning and end may be completely buried. A pretty girl who has the misfortune to require a cutting operation about the face will be very grateful for anything you can do to minimize the deformity of a cicatrix.

In using retractors during a dissection be careful to raise up the tissues, not merely separating the lips of the wound, but lifting the skin or fascia away from the deeper structures. In this way the bloodvessels are not emptied and rendered invisible, but may be clearly seen, allowing the operator to secure them before dividing them. The different fascial and muscular layers are also separated from each other, so that they may be divided one at a time. By the faulty method of mere lateral traction the layers rest one upon the other, forming apparently a single membrane, while very considerable vessels being emptied of their blood become

invisible and may give one a most disagreeable surprise when, after a stroke of the knife through an apparently innocent bit of fascia, the tension is released and a sudden gush of blood fills the wound.

Exploratory Operations. The exploring needle may be more dangerous than the knife. It is wisest not to make a puncture where pus is expected until you are prepared to lay open the cavity.

When you have found pus in an exploratory puncture, *never* take out your needle, if the case is one for operation, until the pus cavity has been widely opened.

In peritonsillar abscess an aspirating syringe with a long needle will usually find the pus with very little pain, and will often prevent the repeated blind stabbing so annoying to the surgeon and so demoralizing to the patient.

An exploratory operation is often of value, but it is very seldom that an operation of any kind is not more or less of the "exploratory" variety. The cleverest diagnostician may err as to important particulars. It is, however, our duty to make every effort to know the disease we are fighting; to discover the enemy's position and estimate his strength before advancing to the attack.

Fractures. Never examine for crepitus in supposed fracture of the skull. Depression or other uneveness of surface, together with symptoms referable to cerebral injury, will enable one usually to make a diagnosis and will not jeopardize the life of the patient.

Fractures of the arm and fore-arm are often kept too long in splints, and the resulting atrophy from disuse may in the end be far more serious to the patient than a moderate degree of deformity with a sturdy and useful member.

In cases of fracture at or near the elbow avail yourself of the X-ray even when you believe your previous diagnosis to be absolutely correct. You will often see something which will disagreeably surprise you, and if the examination has not been put off till too late, you may correct a faulty position of bone fragments which has been concealed by the swelling of the soft parts.

Be very guarded in your prognosis in cases of injury at the elbow. A fracture into this joint treated with the most far-seeing precautions may be followed by more or less stiffness and disability. Begin passive motion as early as possible, delaying only long enough to allow the first pain and react-

ion from the injury to subside. In most cases this will allow some manipulation of the joint by the end of the first week.

A dislocation should be reduced as soon as pospossible, while a fracture may often be allowed to wait for a convenient time and place, the emergency dressing simply guarding against such accidents as perforation of the skin by subcutaneous fragments of bone, dangerous pressure upon important structures, or threatened laceration of nerves or vessels.

There is seldom any use in treating a fractured hip in an old and feeble person. It is the patient and not his disease which requires careful watching and nursing. Get him out of bed as soon as the local shock with the accompanying swelling and pain subsides, and do not invite pneumonia, bedsores, and a host of complications by confinement in one position. Above all, if any fixation apparatus be used, let it be as light and portable as possible, remembering that in the vast majority of cases good results will be likely to follow treatment without splint or other appliance.

In the treatment of fractures of the leg the fracture box is an apparatus which causes great pain and discomfort. The patient is unable to move

without grinding the proximal fragment against the distal one, so must, perforce, remain in one position. It is far better to use a splint which will allow the fractured member to be moved as a whole. An ordinary wooden splint, properly padded, will answer the purpose, though plaster of Paris is the most satisfactory material which we have. When plaster is used in a case of recent fracture, great care must be taken to put in enough padding, and even then if much swelling is feared it is well to cut the splint through to the padding as soon as the plaster has set. The dressing may later be tightened by a few turns of roller bandage.

In fractures of the leg, especially those in the lower third, much time may be saved the patient by the application of a firm plaster-of-Paris splint without padding, as soon as the first swelling has subsided. A single layer of flannel roller should first be smoothly applied, and directly over this the plaster running from just behind the toes to the tubercle of the tibia. A heel-piece may be made by bandaging in a one-inch muslin roller "on end" over the plaster splint with another plaster-of-Paris bandage. This simple dressing will allow the patient to walk about on the injured limb and will rather aid than interfere with solid bony union. The method is particularly valuable in the treat-

ment of Pott's fracture. When the break is higher up, it is often better to run the plaster up to the middle of the thigh.

Surgery of the Hand. Phlegmon of the hand is frequently followed by considerable disability which may become permanent. This is due to the binding together of the soft parts by contracting scar tissue and the process may go so far as to cause ankylosis and even subluxation of joints. It is possible, in a great measure, to avoid this unwished-for result by insisting upon active and passive motions from the time of the very beginning of the healing process. The frequency of the motions is more important than the force exerted. Pain after the exercises shows that they have been too vigorous. The joints should be moved several minutes at a time, amounting in all to two or three hours in the course of a day. The patient himself can usually carry out this treatment if the dressings are properly arranged. Do not wait till the wounds are healed or your patient may be irreparably disabled.

In cases of severe injury to the fingers by laceration or contusion, put the entire hand into a very ample soaking-wet dressing. Do not even trim off a piece of flapping skin. Incision for drainage is

all that is allowable until healing is very well under way or even quite complete. You may then look over the ground and see whether it is worth while to sacrifice anything. A half inch of *boneless* finger may be of incalculable value to its possessor.

Tracheotomy. Leave a fillet of silk in each edge of the treacheal wound to be used in case the outer tube becomes dislodged. Should this accident occur, or should suffocative symptoms arise when the tube is purposely removed, a slight traction upon the silk fillets will open the trachea widely, at once relieving the patient and rendering the reinsertion of the tube easy.

The operation of tracheotomy is rendered much easier by allowing the patient's shoulders to rest upon a thin pillow with no pillow for the head. The tissues at the front of the neck are thus put upon the stretch and one has plenty of room for the work. Let your skin incision be a long one.

Abdominal Surgery. Lead colic with constipation may simulate intestinal obstruction. Always ascertain the occupation of your patient.

High temperature is not a necessary feature of appendicitis. A case may run the whole gamut of

perforation, abscess, peritonitis and death while the thermometer never exceeds ninety-nine degrees Fahrenheit. The pulse is a much safer guide.

When fecal vomiting is one of the indications for surgical measures, a washing out of the stomach should precede the operation. The danger of aspiration of filthy vomited material during or after the anæsthesia is most grave. This accident has cost many a man his life.

Uncontrollable vomiting after an intra-abdominal surgical operation is usually a sign of interference in the circulation of a vital organ. Its presence is far more ominous than an abnormal pulse, respiration or temperature, and when it has persisted for more than twenty-four hours without any abatement, the idea of reopening the abdomen should be entertained with the hope of relieving some internal strangulation or tension.

Many a case of strangulated hernia has been overlooked and the patient has been treated for colic, epididymitis, bubo, and even for "idiopathic" [!] peritionitis, until at last the almost fatal symptom of fecal vomiting appeared. It is wise in all cases of acute abdominal disease to examine for hernia, and, by-the-way, do not forget that this condition is not limited to the inguinal regions.

If omentum be found in the sac during herniotomy, it is best to cut it off. The omentum should be spread out flat and ligated with many threads to avoid the formation of a massive stump. Such improperly formed stumps may suppurate many weeks after the operation and may cause serious annoyance, an operation for the evacuation of the pus being usually necessary.

A simple colotomy for the relief of one suffering from intestinal obstruction, may be performed with cocaine anæsthesia. The uninflamed peritoneum is remarkably insensitive to pain from incision or from puncture, and the patient does not feel the suturing of bowel to parietal peritoneum. The incision into the distended gut is also a procedure entirely devoid of pain. Manipulation of the intestine, however, such as is necessary in finding and loosening adhesions, requires general narcosis.

Rectal Surgery. Operations about the rectum are very frequently followed by retention of urine which calls for catheterization.

It is a mistake to constipate the patient for more than forty-eight hours after the operation for hemorrhoids by clamp and cautery. When the bowels

do move by oil and soap-suds enema, see that some one is with the patient to act in case of syncope.

When a patient comes to you complaining of symptoms in or about the rectum it is best not to give a final opinion until you have examined the empty bowel. If necessary, request him to take an enema and then return for further examination.

Digital rectal examination is easiest made with the patient lying upon his side with the knees and hips flexed. Tell him to make a mild expulsive effort during the manipulation, and he will experience much less discomfort.

Never give an opinion based on appearances at the anus alone, but always explore with the well lubricated finger as high as you can reach, and also by conjoined touch with a finger of one hand in the rectum, the fingers of the other hand being on the abdomen. A man may have hemorrhoids or anal fissure and also a cancer or polypus high in the gut.

An inflamed hemorrhoid will often cause exquisite pain. The little mass is bluish, hard, and is with difficulty put back into the rectum, if indeed this be at all possible. The treatment is evacuation of the thrombus by a cut radiating from the centre of the anus. Relief is immediate.

Never perform even a trivial operation upon the rectum without carefully considering the advisability of stretching the sphincter. Few, indeed, are the surgical procedures in this region which should not be preceded by thorough stretching. It clears up a doubtful diagnosis and prevents, in great measure, agonizing post-operative pain.

In operating for hemorrhoids by clamp and cautery, be sure you clamp the tissue in radiating folds, so that the eschars shall be to the anal center as the spokes of a wheel to the hub. Subsequent stricture is thus avoided. Do not include too much tissue, for the cautery often burns deeper than one might expect. Only the pile-bearing mucous membrane should be burned; if it is desired to remove the external or skin piles, it may be done by ligation, previously incising through the skin to avoid the pain of the constricting ligature.

Genito-Urinary Surgery.

A polypus or other growth in the urethra will often cause the symptoms of stricture even to the hitch on examination with the bulbous instruments. The endoscope will at once clear up the diagnosis.

The old-fashioned block tin catheter is too valuable an instrument to go into disuse. It may be bent to any desired curve, and will often pass a prostatic obstruction which disputes the right of way with all the soft instruments at our disposal. This catheter is far safer than the woven instrument with stylet, because it may be sterilized by boiling and its curve can be more accurately set.

Most cases of acute cystitis set up by the decomposition of residual urine—a very frequent cause of this complaint—may be cured in a surprisingly short time without washing the bladder and without internal medication, simply by drawing every drop of urine by catheter once every three hours. The catheterization must be done punctually day and night whether the patient urinates or not. Five minims of oil of wintergreen twice daily, and the ingestion of a gallon of water every twenty-four hours will contribute to the cure and will greatly hasten it.

If a male patient with gonorrhœa complains of frequent and difficult micturition, the deep urethra is involved. If such a patient has a chill and no swelling of the organs in his scrotum, *do not* ascribe the chill to malaria without most carefully

eliminating abscess of the prostate. Examination, by rectum, will show the tender, enlarged and hard, but elastic body, which had best be opened through the perineum before waiting too long. Perforation into the rectum is especially to be shunned because of the danger of urethro-rectal fistula.

Surgery of Lymphatic Glands. An inflamed femoral gland, by which is meant one of the lymph-nodes over the femoral ring, may have been infected by extension along the lymphatics from an ingrown toe-nail, an inflamed corn, or a fissure at the anus. If the gland is not suppurating, attention to the distant cause of the inflammation, as well as more strictly local treatment, may abort the formation of abscess.

An enlarged *non-syphilitic* lymphatic gland may be safely treated by the ice-bag and internal medication as long as there is no fever and no tenderness. When the gland is chronically enlarged and is *tender* to compression with the fingers, a central pus focus should be suspected, and even a slight daily rise of temperature makes the diagnosis almost certain. Such glands, if they are not adherent by brawny infiltration to the surrounding

parts, may be easily removed entire by dissection and the wound may be sewn up. *Do not try* to dissect out a gland which feels firmly fixed by hard, brawny adhesions. Such cases demand free incision and packing. No sutures should be used.

When a lymph gland abscess which has been incised shows indolence in healing, the cavity should be frequently curetted and disinfected. When the signs of neighboring gland involvement appear a free and extensive dissection should be undertaken for the removal of all suspicious tissue, whether cicatricial or glandular. A delay of a few days may be permitted where syphilitic disease is suspected in order to try the effect of appropriate general medication.

Many regard the presence of enlarged epitrochlear lymph nodes as pathognomonic of syphilis. It should, however, be remembered that almost any acute infection on the hand or forearm, especially if it be deep, will cause these glands to enlarge and even suppurate. Infections on the back of the fingers or hand and along the ulna are those which more commonly cause epitrochlear swelling. The enlargement often persists for some time after the original wound is healed.

Septic Conditions. In septic conditions the patient is often very uncomfortable by reason of dryness of the tongue. A bit of ordinary chewing gum will usually start the oral secretions and will in a very short time give relief.

Acute general sepsis in a robust young person may be favorably influenced by venesection, withdrawing about fifteen ounces of blood, and by following this with the infusion of about a quart and a pint of normal saline solution either into the vein or by high enema. This not only withdraws a certain amount of poison from the system, but the infusion causes the clogged kidneys to act and go on with their work of elimination. In feeble individuals the intravenous saline infusion, without previous blood-letting, is of value. Here we get the diuretic action of the fluid, and at the same time we dilute the whole bulk of the patient's poisoned blood, probably reducing its toxic effect upon the vital nerve centers.

Osteomyelitis. Deep, rapidly increasing pain in an arm or leg accompanied by swelling without redness or fluctuation, together with high fever or chills, is the typical picture of acute osteomyelitis. The dis-

ease at this stage, which may be a few days or only a few hours from its onset, is indeed one of the emergencies of surgery. The diagnosis must be carefully but fearlessly made, and the treatment speedily instituted, for delay may mean death or life-long deformity. No temporizing should be permitted once the diagnosis is clear, but free incision to the bone with chiseling into its marrow should be at once performed. You will not find pus as a rule in these early cases, but a periosteum which is easily peeled from the bone and a cortex which bleeds but little. Immediate relief of symptoms will show that you have not struck amiss. The frequency of necrosis of bone would be greatly reduced if these timely operations were more common. Unfortunately, the procrastinating poultice or the ice-bag too often has its day, and in the meantime local tissue destruction and general sepsis may compromise the case. Remember that any bone may be the seat of acute osteomyelitis, although it is oftenest encountered in the long bones.